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ABSTRACT

After a brief historical review of the background and research, the paper focuses on development of a teacher-administered behavior rating scale to screen for school adaptation problems on a large scale basis using as Ss 15 primary grade teachers and their ratings of 315 primary grade children (ages 6-to-10 years) in their classes. A 16-item Classroom Adaptation Scale (CAS) (developed from previous research) included ratings for aggression, emotionality, learning problems, and total score. The AML Behavior Rating Scale (P. Bessier and P. Van Fleet) scored aggressive-outgoing (A), moody-internalizing (M), learning disability (L), and total score. The CAS and the AML were used along with a demographic questionnaire to test the validity of the CAS. Results were generally positive with each subscale of the CAS relatively non-overlapping and stable; the learning problem and aggression subscales were more homogeneous and stable than the emotionality subscale. It was determined that the CAS can provide an adequate global measure of school maladaptation. The instrument was also found to be highly reliable and have convergent validity as related to the AML. (PHR)

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The Classroom Adaptation Scale: A Behavior Rating Scale Designed to Screen Primary Grade Children for School Adaptation Problems

A Paper Presented at the
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Session T31

The Classroom Adaptation Scale: A Behavior Rating Scale Designed to Screen Primary Grade Children for School Adaptation Problems

Strategies employed for the early identification of exceptional children have received much attention and support in the past from psychological and educational practitioners. Very recent legislation in the form of The Education for All Handicapped Children Act (P.L. 94-142) has added a further argument in favor of these strategies. Public Law 94-142 not only mandates individualized education for all handicapped children known to local educational agencies (LEA) but adds the responsibility for each LEA to actively seek handicapped children within its population.

> Each annual program must include in detail the policies and procedures which the state will undertake or has undertaken to insure that: All children who are handicapped, regardless of the severity of their handicaps, and who are in need of special education and related services are identified, located, and evaluated;... (P.L. 94-142, 121a.128).

This second mandate has led to establishment of various screening and diagnostic programs by many LEAs. The text of this recent law even employs the term 'early identification' defined as: "implementation of a formal plan for identifying a disability as early as possible in a child's life" (P.L. 94-142,121a13(3)).

Nonetheless, prior to implementation of P.L. 94-142, practitioners have used early identification techniques in many settings. The

utility of such techniques has stemmed from a firm conceptual orientation originating from the physical disability model. This model makes four basic assumptions related to early identification: 1) the condition already exists in the child; 2) diagnosis indicates a course for remediation; 3) early intervention maximizes remediation impact; and 4) early identification prevents developmet of other deleterious conditions and minimizes compounding problems (Keogh & Becker, 1973). Documented reduction in incidence or reduction in the severity of many unwanted conditions resulting from early identification programs has validated this conceptual orientation. Implementation of P.L. 94-142 has added legislative validity to the early identification orientation and should further its growth and development.

Empirical support for the need of early identification efforts can be derived from various incidence studies. Much of this research suggests that a significant number of children experience problems or conditions that hinder a normal adaptation to typical school environments. In one research example, Glidewell and Swallow (1969) concluded that 30% of American school children experience school adaptation problems. In high risk settings, such as the ghettos of urban areas, the school maladaptation figure may be as high as 70% (Kellam & Schiff, 1967). Cowen (1971) recognized that a large number of children are at educational risk.

School maladaptation can be broadly defined as either an

inability for any child to meet the expectations of a regular classroom environment without the presence of supportive intervention or a potential to develop such an inability. The reasons for school maladaptation, as defined above, fall into two general categories. First, children with traditional handicapping conditions have difficulty adapting to regular classrooms without support. Public Law 94-142 includes mental retardation, hard of hearing, deafness, speech impairment, visual impairment, serious emotional disturbance, orthopedic impairment, other health impairment, multi-handicapped, and specific learning disabilities within its definition of handicapped (Public Law 94-142, 121a.5). Such categories are consistent with those given in the literature concerning exceptional children (Kirk, 1972). Second, children with a variety of psychogenic disorders also have difficulty adapting to regular classrooms without support. The possible causes are too numerous to catalog but Glidewell and Swallow (1967) outlined four general categories of behaviors that a child experiencing school adaptation problems for psychogenic reasons might manifest. The four categories are: 1) anti-social acting out behaviors; 2) intrapersonal distress and tension; 3) interpersonal ineptitude; and 4) developmental problems. Regardless of cause, both categories of children are likely to experience difficulty adapting to a regular classroom without supportive intervention.

Psychologists have tended to stress the behavioral and adaptive aspects of classroom adjustment for both the above categories of

children. Educators on the other hand have quite understandably emphasized educational progress. Integration of educational and behavioral aspects appears to provide the most useful foundation for assessing school adaptation. Cowen (1971) suggested that chronic failure or exceptionality in either the behavioral or educational aspect of school adaptation could adversely affect performance in the other aspect. The new failure or exceptionality could exacerbate the original difficulty. If uninterrupted, this circular relationship continues and the child's problems can become increasingly severe. Assessment procedures addressing both the behavioral and educational aspects of school adaptation should be more effective than procedures addressing only one.

Cowen (1971) proposed widespread use of early detection and screening procedures (i.e., early identification) as part of an alternative approach to school adaptation problems. Cowen's preventive orientation is conceptually supported by the fourth assumption of the physical disability model while empirical support is more difficult to generate because of ethical concerns. Keogh and Becker (1973) raise the issue of denying intervention when information a problem or potential problem is known. Early screeing procedures maximize the possibilities for developing parsimonious interventions to cope with school adaptation problems. However, in some cases, a preventive orientation shifts the use of screening from confirming already existing conditions to hypothesizing about future development.

This subtle shift in the first assumption of the disability model is crucial for the development and use of early identification strategies since predictive validity becomes a vitally important issue.

Cowen et al. (1973) considered an instrument containing relatively few items, requiring a minimal investment of time, and possessing adequate psychometric properties to be crucial for the success of any large scale screening program. Screening instruments have generally taken the form of rating scales. A large number are currently on the market. Examples of these assessment instruments (by no means an exhaustive list) are the AML Behavior Rating Scale (AML) (Bessier & VanVleet, 1962), the Teacher Behavior Rating Scale (Cowen, Zax, Izzo, & Trost, 1966), the Ottawa School Behavior Survey (Pimm & McClure, 1966), the Devereau Elementary School Behavior Rating Scale (Spivack & Swift, 1967), and the Burks' Behavior Rating Scale (Burks, 1967; cited in Buros, 1972). Each scale implicitly or explicitly claims that it is suitable for use in mass screening programs. However, criticisms concerning the utility of some scales for mass programs have been raised. Scales like the Devereau and the Burks' are best suited for diagnostic and placement decisions since they contain too many items (47 and 119 respectively) to be used for entire classrooms by overworked practitioners. Scales like the AML, TBRS, and OSBS seem better suited for screening large numbers of children in a relatively short time since they contain fewer items.

With an established need for brevity, who will rate the children? Considering the dual behavioral/educational nature of school adaptation, classroom teachers have emerged as the most appropriate judges of children's adaptation to school. Their evaluation of the fit between the school's expectations for behavior and educational progress and the child's ability to comply has been the basis for determining whether a child has a school adaptation problem (Cowen, 1971). Many early identification and treatment programs have centered around the classroom teacher as agent of identification (Brownbridge & VanVleet, 1969; Cowen, et al., 1973; Newton & Brown, 1967; Schiff & Kellam, 1967). As noted before, rating scales have been the instrument of choice for the assessment portion of these programs. Several researchers have demonstrated the accuracy of teachers' evaluations of school adaptation as focused by rating scales (Bullock & Brown, 1972; Keogh & Smith, 1970; Spivack, Swift, & Prewitt, 1971; Tobiessen, Duckworth, & Conrad, 1971).

The question now becomes whether a screening instrument should be applied as an early identification technique for traditionally defined handicapping conditions or to formulate an early hypothesis concerning the child's potential for developing an inability to adapt to the school environment. Referring back to the assumptions of the physical disability model we find that early identification can be used to suggest in-child conditions as many traditional handicaps are. Screening instruments can also be used to formulate

hypotheses concerning future school adaptation given a child's current behavior presumably determined by psychogenic causes. In general, screening instruments can be used to identify both types of school adaptation problems early in a child's school career so further diagnostic attention and appropriate remedial services can be provided.

The purpose of this report is to present the research concerning the initial development of a screening instrument for use in early identification programs and to discuss potential implications of using such an instrument in educational settings. The research will seek to accomplish the following objectives.

Objective 1. To develop a brief, easily administered behavior rating scale for use by classroom teachers to screen for school adaptation problems on a large scale basis.

Objective 2. To write all items in behavioral terms and with those items tap the behavioral and educational aspects of school adaptation.

Objective 3. To construct the scale with solid basic psychometric properties of reliability and validity as well as an ability to discriminate between adapted and maladapted groups.

Method

Subjects.

Fifteen primary grade teachers from five different elementary schools within a single St. Louis County school district voluntarily

served as subjects. All subjects were Caucasian females with teaching experience ranging from one to twenty years. Four taught the first grade, six the second grade, and five the third grade. All were certified for regular classroom teaching (i.e., none were special educators).

These teachers provided ratings for 315 children; 81 first graders, 121 second graders, and 113 third graders. The sample included 157 girls and 158 boys. Racially, the sample consisted of 296 (94%) Caucasian children and 19 (6%) minority children. At the time of the ratings, the children's ages ranged from 6.5 to 7.5 years for first graders, 7.6 to 8.6 years for second graders, and 8.7 to 9.6 for third graders.

Materials.

The materials included three different behavior rating scales, a set of frequency designator definitions applying to all scales, and a questionnaire form for teachers.

The Preliminary Classroom Adaptation Scale (PCAS) was used first. The PCAS essentially represented an item pool for reduction according to a systematic test construction strategy. The PCAS was not scored. The PCAS items are shown in Figure 1 without the rating form and frequency designator definitions which had been included when the scale was actually used.

The 16 item Classroom Adaptation Scale (CAS) was used second. The CAS represented the final product of the research and contained

the most statistically sound items from the PCAS. The CAS form is shown in Figure 2. The Scoring procedure for the CAS yeilds four scores: Aggression (AG), sum of responses for items 1,4,7,10, and 13; Emotionality (E), sum of responses for items 2,5,8,11,14, and 16; Learning Problem, (LP), sum of responses for items 3,6,9,12, and 15; and Total Score, sum of responses for all 16 items. Items are scored 1 to 5 according to frequency of that behavior for an individual child. The ranges of possible scores are: AG and LP, 5-25; E, 6-30; and Total, 16-80.

The AML Behavior Rating Scale (Bessier & VanVleet, 1962) was also used. The AML is an 11 item scale yeilding four scores; Aggressive-outgoing (A), Moody-internalizing (M), Learning disability (L), and Total Score. Items are scored 1 to 5 according to the frequency of behavior. The ranges of possible scores are: A and M, 5-25; L, 1-5; and Total, 11-55.

The items for all scales are negatively worded so ratings provide an index of the degree of maladaptation. All CAS and AML scores indicate the degree of maladaptation such that as scores increase, so also does the probability that a child is experiencing or will experience problems adapting to a regular classroom.

Accompanying the rating forms was a list of frequency designator definitions. These were intended to provide teachers with objective and consistent definitions for the terms Never (1), Seldom (2), Moderately Often (3), Often (4), and Most or All of the Time (5).

These definitions were developed for use in the Rochester Primary Mental Health Project (Cowen, et al., 1973) where they proved to be extremely effective in reducing the subjectivity of teachers' ratings.

The final set of materials used included a questionnaire form eliciting demographic information about teachers and children and a list of any children who had beeen referred for special help during the 1977-78 academic year. School personnel provided the children's achievement test scores from the Gates-MacGinitie Reading Test (G-MRT), Test of Academic Aptitude (TAA), and Comprehensive Test of Basic Skills (CTBS) gained from the annual district-wide testing program completed in February 1978.

Procedure.

Items for the PCAS or item pool were generated according to a number of strategies.

Aggression subscale. On an a priori basis, the nine items for this subscale described a finite set of behaviors belonging to a commonly accepted profile of an acting out child. Three items (PCAS 1,4,and 10) were adopted unchanged from the latest version of the AML (Cowen et al., 1973). Another AML item (PCAS 16) was adopted but expanded to clarify the meaning of 'obstinate'. PCAS item 13 is also a slight revision of an AML item. The other four items (PCAS 7,19,22, and 25) for this subscale were added by describing behaviors commonly associated with aggressive behavior problems (Kvaraceus, 1958; Yater, Note 3).

Emotionality subscale. On an a priori basis, the nine items generated for this subscale were intended to describe the behavior of a child experiencing intrapersonal distress and interpersonal problems. One item (PCAS 2) was adopted without change from the AML. PCAS items 17 and 26 were written to provide two appropriate behavioral correlates of depression according to Beck (1967). Another AML item (PCAS 11) was rewritten to remove the need for a teacher's judgment concerning a child's illness and instead empasize the behavior of a child complaining of illness. Another AML item (PCAS 14) was rewritten in terms of a readily observable behavior. PCAS items 5,8,20, and 23 were written to reflect both the intra- and inter- personal aspects of emotional maladaptation.

Learning problem subscale. On an a priori basis, the nine items generated for this subscale were intended to represent a range of behaviors suggestive of learning difficulty. A learning model proposed by Gange (1974) was used to generate items describing problems at the various stages of learning. PCAS items 3 and 24 dealt with the attending or selective perception phase. PCAS items 15 and 18 dealt with the acquisition phase or the short term retention of information prior to long term storage. PCAS item 27 addressed the recall or retrieval of information phase. PCAS items 6,9, and 12 dealt with the performance or quality of responding phase.

Completion of rating scales. Following the generation of PCAS items, teachers completed that scale followed by the CAS and later

the AML. Ratings were completed in April of 1978. Before allowing teachers to rate children, they were consulted concerning the proper use of the rating scales. All scales, the PCAS, CAS, and AML, use a similar format and the same frequency designator definitions. Particular attention was given to the specifically defined nature of the frequency terms. Further, teachers were cautioned to abandon their personal definitions of the frequency terms and use the definitions provided. Use of these frequency definitions has been shown to yield a more objective recording of the frequency of behaviors than the more individualistic interpretations of teachers.

Teachers completed the PCAS for each child in their class, receiving three days to complete the rating. Two weeks later, following item selection, the same teachers completed the CAS, again receiving three days to complete the rating. One week following completion of the CAS, teachers rated the children using the AML.

Item selection strategy. The CAS was derived from the PCAS according to a factor analysis strategy with the ultimate goal being a three factor instrument containing 15-18 items. All factor analyses included data for 315 children. The first factor analysis of the PCAS yielded an unrotated solution with the number of factors equalling the number of variables (items). The resulting 27 eigenvalues were examined to determine the number of factors accounting for a significant amount of variance in the data with the criterion being eigenvalues greater than 1.0 (Nunnally, 1967). Following this,

a series of factor analyses yielding obliquely rotated solutions was undertaken. The selection of the 16 items for the CAS from this series is described in greater detail in the Results section.

Achievement and referral data collection. School district personnel searched the district's test files to provide group achievement test data from the February 1978 testing p ogram. For first graders (n=79), grade equivalent scores for the Vocabulary and Comprehension subtests of the Gates-MacGinitie Reading Test were available. For a subsample of second graders (n=40), grade equivalent scores for the Science and Social Studies subtests of the Comprehensive Test of Basic Skills were available. For third graders (n=109), IQ equivalents from the Test of Academic Aptitude Verbal, Nonverbal, and Total scales and the grade equivalent scores for the entire Comprehensive Test of Basic Skills were available.

Results

The results of this research seem best reported in two distinct sections; one dealing with the derivation of the CAS from the PCAS and another dealing with the various psychometric properties of the newly developed CAS.

Section 1: Derivation of the CAS.

The CAS was derived according to a systematic factor analysis strategy. The first step of the item selection process was a factor of the PCAS providing an unrotated solution where the number of factors equalled the number of items (variables). Five factors

explained a significant amount of the total variance (66.7%) within the PCAS.

Considering this possible five facto solution, a series of three factor analyses using oblique rotation to achieve the final solution was conducted. The first and second of the series, five and four factor oblique solutions, yielded the item loadings summarized in Table 1. That table indicates that only eight items (8.9.10.11.14,16.17. and 22) loaded significantly on the fourth and fifth factors as determined by factor loadings greater than .30. Table 2 summarizes the item loadings for the final factor analysis of this series, a three factor oblique solution. Five factors explained 66.7 percent of the total variance in the PCAS. This final analysis explained 58.6 percent of the total variance in the PCAS. Therefore it can be concluded that only three factors are sufficient to explain a significant portion of the total variance in the PCAS.

The item loadings derived from the final three factor solution of the PCAS comprised the data for selecting items for the CAS. Items were selected for the CAS so as to form three separate factors or homogeneous clusters of items that defined three subscales. The selection criteria were operationalized as follows: an item became part of a subscale if it had one ot the five highest item loadings on a given factor and did not have a significant (greater than .30) loading on any other factor (Thurstone, 1947). There were difficulties in selecting items to define Factor three because of the relatively

Table 1

Item Loadings from Five and Four Factor,

Oblique Solutions for PCAS[a]

	Factor								
Item	1	1	2	2	3	3	4	4	5
1	.698	.701	.034	.024	.085	.090	.005	.101	.076
2	.259	.293	.238	.390	.024	.021	.042	.012	.248
3	.057	.020	.005	.025	.893	.890	.018	.050	.062
4	.899	.936	.073	.001	.035	.039	.061	.067	.087
5	.654	.636	.018	.118	.122	.168	.155	.258	.234
6	.014	.051	.177	.180	.648	.604	.241	.268	.029
7	.574	.510	.163	.126	.035	.067	.019	.044	.077
8	.062	.116	.069	.322	.073	.140	.151	.185	.473
9	.226	.385	.072	.298	.351	.303	.376	.350	.152
10	.589	.788	.219	.060	.120	.096	.364	.258	.190
11	.011	.217	.033	.361	.011	.104	.103	.022	.741
12	.063	.129	.062	.199	.525	.535	.089	.080	.223
13	.735	.851	.205	.156	.002	.031	.239	.140	.018
14	.241	.218	.443	.619	.083	.094	.045	.094	.304
15	.070	.058	.055	.003	.840	.807	.133	.167	.117
16	.259	.275	.172	.359	.143	.176	.074	.127	.325
17	.208	.103	.430	.645	.182	.163	.218	.227	.354
18	.017	.026	.086	.056	.818	.862	.123	.106	.069
19	.809	.894	.090	.022	.019	.008	.190	.792	.059
20	.174	.137	.558	.624	.067	.041	.095	.068	.120
21	.010	.039	.109	.034	.733	.784	.173	.157	.146
22	.676	.544	.105	.129	.058	.099	.279	.367	.061
23	.243	.164	.482	.589	.160	.167	.094	.128	.196
24	.495	.516	.108	.122	.224	.188	.164	.112	.018
25	.770	.620	.097	.051	.002	.016	.205	.284	.078
26	.055	.135	.352	.339	.070	.081	.056	.049	.003
27	.002	.052	.590	.541	.392	.333	.196	.209	.066

[a] n=315

[b] Item loadings from four factor oblique solution.

Table 2

Item Loadings from Three Factor,

Oblique Solution for PCAS[a]

Item	Factor 1(LP)	2(AG)	3(E)
1	.064	.738[b]	.003
2	.065	.406	.355
3	.887[b]	.038	.080
4	.013	.941[b]	.071
5	.052	.764[b]	.129
6	.816[b]	.057	.045
7	.104	.534	.061
8	.096	.236	.315[b]
9	.608	.208	.001
10	.330	.608	.221
11	.225	.223	.275
12	.657[b]	.101	.087
13	.112	.726[b]	.272
14	.168	.312	.551[b]
15	.916[b]	.001	.102
16	.174	.372	.317
17	.251	.171	.478[b]
18	.721[b]	.068	.034
19	.121	.808[b]	.133
20	.242	.128	.505[b]
21	.624	.084	.006
22	.098	.717	.198
23	.195	.281	.547[b]
24	.341	.438	.004
25	.136	.682	.074
26	.083	.072	.356[b]
27	.595	.129	.392

[a] n=315

[b] Items fulfilling selection criteria of Thurstone(1947)

low loadings and failures to meet Thurstone's (1947) criteria for simple structure. Therefore it was felt that increasing the number of items for this subscale to six would enhance this subscale's definition.

The results of the selection process which intended to give the CAS a multi-factor structuce are discussed below. Factor 1 was defined by items 3,6,12,15, and 18 and unified by the dimension of learning difficulty. That factor was labelled the "Learning Problem" (LP) subscale. Factor 2, defined by items 1,4,5,13, and 19, and unified by the dimension of aggression was labelled the "Aggression" (AG) subscale. Factor 3 was defined by items 8,14, 17,20,23, and 26; the unifying dimension here was more difficult to discern but the factor was finally labelled the "Emotionality" (E) subscale.

The final step in derivation was a check of the items selected in order to evaluate the success in building a subset of items that would consistently divide into three homogeneous clusters. Table 3 summarizes the item loadings from a three factor oblique solution using only the 16 items selected from the PCAS. These 16 items will constitute a tenative instrument callled the Classroom Adaptation Scale Extracted (CASE) for use as a scale in validating the item selection process, determining factor stability, and establishing reliability. All items in the AG and LP subscales loaded highly and exclusively on their respective factors. Within the E subscale,

Table 3

Item Loadings for Three Factor,

Oblique Solution for CAS

as Extracted from PCAS[a]

CAS Item	PCAS Item	Factor[b] 1(LP)	2(AG)	3(E)
1	1	.079	.729[b]	.019
2	14	.117	.344	.602[b]
3	6	.832[b]	.046	.014
4	4	.052	.957[b]	.016
5	17	.499	.199	.420[b]
6	3	.626[b]	.184	.013
7	5	.034	.746[b]	.202
8	20	.282	.106	.448[b]
9	12	.669[b]	.102	.052
10	13	.070	.722[b]	.149
11	23	.171	.273	.598[b]
12	15	.934[b]	.015	.129
13	19	.104	.827[b]	.069
14	26	.069	.124	.383[b]
15	18	.673[b]	.075	.019
16	8	.048	.265	.332[b]

[a] n=315

[b] Indicates items chosen for each factor.

items 2 and 5 (PCAS 14 and 17) loaded highly on other factors indicating a degree of multidimensionality in those items. The loadings generally suported the ultimate goal of building a three factor instrument. However, problems remain with the E subscale.

Section 2: Psychometric Properties of the CAS.

Following the derivation of the CAS, this research focused on selected psychometric properties on this instrument.

Internal characteristics. This section will deal with the basic statistical properties of a test, namely the mean, standard deviation, and standard error as summarized in Table 4. All distributions were positively skewed; as expected in view of the nature of the instrument (i.e., indicating degree of maladaptation). The CAS is scored so that high scores indicate greater maladaptation. Since fewer maladaptated than well adapted children are present in the schools, it follows that the CAS would yield few high scores; which is precisely how the CAS scores were distributed. The standard errors for all items, subscale, and totals are low and suggest that obtained scores are very accurate estimates of true scores.

Factor Structure. The factor structure of the CAS was explored through comparisons with the CASE. Table 5 shows the item loadings for the CASE and CAS as derived by a three factor, oblique solution. Several items were problematic in terms of failing to meet Thurstone's criteria for simple structure (items 5,7, and 14) or in terms of shifting loadings over the two administrations of the CAS (item 8).

Table 4

Mean Scores, Standard Deviations and Standard Errors of Measurement for CASE and CAS[a]

Item/Subscale	CASE (CAS) M	CASE (CAS) SD	CASE (CAS) SE
1	2.42 (2.30)	1.11 (.99)	.063 (.056)
2	2.17 (2.33)	1.01 (1.00)	.057 (.056)
3	2.43 (2.49)	1.22 (1.16)	.069 (.065)
4	2.26 (2.29)	1.23 (1.14)	.069 (.064)
5	2.26 (2.25)	1.09 (1.08)	.061 (.061)
6	2.46 (2.38)	1.39 (1.31)	.078 (.074)
7	1.92 (1.93)	1.08 (1.02)	.061 (.057)
8	1.84 (1.87)	.92 (.94)	.052 (.053)
9	2.16 (2.20)	1.07 (1.07)	.060 (.060)
10	2.37 (2.41)	1.22 (1.19)	.069 (.067)
11	1.97 (2.10)	.98 (.95)	.055 (.054)
12	2.31 (2.27)	1.19 (1.18)	.067 (.066)
13	2.36 (2.49)	1.19 (1.14)	.067 (.064)
14	2.62 (2.42)	1.27 (1.14)	.072 (.064)
15	2.49 (2.31)	1.13 (.94)	.063 (.053)
16	1.73 (1.64)	.97 (.91)	.055 (.052)
AG	11.32 (11.41)	5.02 (4.70)	.283 (.265)
E	12.58 (12.60)	4.12 (4.04)	.232 (.228)
LP	11.84 (11.67)	4.93 (4.58)	.278 (.258)
Totals	35.75 (35.67)	11.57(11.19)	.652 (.630)

Table 5

Item Loadings for Three Factor, Oblique Solution for CASE and CAS[a]

Item	Factor 1 (LP)		2 (AG)		3 (E)	
1	.08[b]	(.14)[c]	.73	(.67)	.02	(.10)
2	.12	(.09)	.34	(.25)	.60	(.71)
3	.83	(.72)	.05	(.01)	.01	(.11)
4	.05	(.05)	.96	(.87)	.02	(.08)
5	.49	(.44)	.20	(.19)	.42	(.37)
6	.63	(.63)	.18	(.13)	.01	(.10)
7	.03	(.06)	.75	(.55)	.20	(.41)
8	.28	(.44)	.11	(.07)	.45	(.29)
9	.67	(.71)	.10	(.14)	.05	(.07)
10	.07	(.06)	.72	(.75)	.15	(.11)
11	.17	(.23)	.27	(.13)	.60	(.64)
12	.93	(1.01)	.02	(.06)	.13	(.14)
13	10	(.13)	.83	(.81)	.07	(.01)
14	.07	(.01)	.12	(.30)	.38	(.29)
15	.67	(.59)	.08	(.05)	.02	(.04)
16	.04	(.06)	.26	(.17)	.33	(.47)

[a] n=315

[b] Item loadings for CASE

[c] Item loadings for CAS

All other items satisified Thurstone's (1947) criteria for simple structure and maintained similar loadings on the same factor for both administrations.

Reliability. Table 6 summarizes the test-retest reliability coefficients for the CAS. Also presented in Table 6 are the subscale intercorrelations for both the CAS and CASE. The subscale-total correlations have been corrected by the part-whole correlation correlation correction formula (Nunnally, 1967) because each subscale represents a significant portion of the total score which introduces a large amount of spurious correlation into the subscale-total relationship. The correlations were all significantly different from zero ($p < .05$) (McNemar, 1969) and indicated a low to moderate degree of subscale overlap. This level of correlation indicates that the subscales are all sampling the same domain, defined as maladaptation, but still retain enough independence to make a unique contribution to the instrument and can be interpreted alone since they tap different aspects of the domain.

Reliability was determined by the test-retest method supported by computation of coefficient alpha (Nunnally, 1967). A two-week period between administrations of the CASE and CAS was chosen as the retest interval. Use of the retest method with the CASE and CAS was made possible by extracting the 16 items common to the CAS and PCAS and computing exactly the same subscale and total scores (DeYoung, Note 1). All test-retest coefficients (on the diagonal

of Table 6) suggested a high degree of reliability for the entire CAS.

Table 7 summarizes the coefficient alpha for each subscale and the total score. Coefficient alpha represents the correlation of a test with a hypothetical alternate form. It provides an index of internal consistency and can be used to support the test-retest method to determine reliability. The test-retest and coefficient alpha are interchangeable indices of reliability (Nunnally, 1967). Each coefficient alpha obtained indicated a high degree of internal consistency and supported the high test-retest coefficients reported earlier. The coefficient alpha for the E subscale is noticeably lower than those for the other subscales although still well within acceptable limits.

Convergent validity. Convergent validity was determined by examining the relationship between the CAS and a similar screening instrument, the AML. Table 8 summarizes the correlation coefficients between the CAS and an administration of the AML. The coefficients on the diagonal represent the relationship between similar subscales (i.e., A with AG, M with E, and L with LP) and the Total Scores. These validity coefficients fell within the moderate to high range of relationship. These findings suggest that the CAS is tapping the same construct as another instrument of already proven effectiveness in assessing school maladaptation.

Predictive validity. Predictive validity was determined by

Table 6

Reliability Coefficients and Subscale Intercorrelations for the CAS

	Subscale	AG	CASE E	LP	Total
CAS	AG	.89[a]	.38	.59	.56
	E	.43	.80[a]	.55	.52
	LP	.61	.64	.86[a]	.67
	Total	.58	.61	.73	.89[a]

[a] Test-retest reliability coefficients.

Note. Subscale-total correlations have been corrected according to a part-whole correlation correction formula (Nunnally, 1967, p. 262).

Note. $p < .05$ if $r > .19$.

Table 7

Coefficients Alpha for the CASE and CAS[a]

Subscale	AG	E	LP	Total
CASE	.91	.74	.88	.90
CAS	.91	.75	.87	.91

[a] $n = 315$

examining the relationship between the CAS and group achievement test data and the relationship between the CAS and referral data.

Table 9 summarizes the correlations between the CAS and the group achievement test scores (Gates-MacGinitie Reading Test, Test of Academic Aptitude, and Comprehensive Test of Basic Skills). All but two coefficients were in the expected direction (negative) indicating that high CAS scores predict low achievement test scores. Theory suggests that maladapted children achieve at a lower level than better adapted children and these validity coefficients indicate that the CAS performed consistently with the theory. Coefficients that were not negative did not differ significantly from zero. The coefficients relating the AG and E subscales to test scores ranged from no relationship to low relotionship. The coefficients relating the LP subscale to test scores were predominately in the mild to moderate range of relationship. The coefficients relating the Total Score to test scores ranged from low relationship to mild relationship. These validity coefficients for all CAS subscales and Total Score were significantly different from zero ($p < .05$) if: 1) $r > .20$ for G-MRT Vocabulary and Comprehension, 2) $r > .30$ for CTBS Science and Social Studies, and 3) $r > .19$ for TAA and CTBS Total Battery (McNemar, 1969). The LP subscale predicted most achievement scores to a significantly greater degree ($p < .05$) than other subscales (McNemar, 1969).

The referral data gathered divided the sample into two groups:

Table 8

Convergent Validity Coefficients for the CAS[a]

		AML			
	Subscale	A	M	L	Total AML
CAS	AG	.88[b]	.54	.43	.80
	E	.42	.72[b]	.48	.63
	LP	.60	.58	.78[b]	.71
	Total CAS	.76	.72	.67	.85[b]

[a] n=315

[b] coefficients comparing like subscales.

Table 9

Validity Coefficients Relating Group

Achievement Test Data to the CAS

Test	n	Subscale AG	E	LP	Total
G-MRT Vocabulary[a]	78	-.12	-.30	-.67	-.48
G-MRT Comprehension[a]	79	-.18	-.40	-.71	-.56
CTBS Science[b]	40	.11	-.35	-.30	-.25
CTBS Social Studies[b]	40	.05	-.40	-.32	-.30
TAA Verbal[c]	107	-.24	-.20	-.53	-.40
TAA Nonverbal[c]	109	-.34	-.22	-.33	-.37
TAA Total[c]	108	-.35	-.24	-.49	-.44
CTBS Total Battery[c]	108	-.35	-.22	-.56	-.46

[a] r is significantly different from zero ($p<.05$) if $r>.22$.

[b] r is significantly differnet from zero ($p<.05$) if $r>.30$.

[c] r is significantly different from zero ($p<.05$) if $r>.19$.

Referred (n = 65) and nonreferred (n = 250). The means and standard deviations for these two groups from the AML and CAS and the results of the t-tests comparing the two groups are summarized in Table 10. All differneces in means were significant ($p < .01$ df = 314) with every mean for the referred group being greater.

Table 11 summarizes the agreement ratios between the teachers' criterion of Problem Child versus Non-problem Child (based on the division of the sample into two groups according to referral) and the AML and CAS definitions of Problem Child versus Non-problem Child. The AML and CAS definitions were based on atotal score greater than a 70th percentile cutoff point (Glidewell & Swallow, 1969) for each distribution. This translated into 28 points (out of 55 possible) for the AML and 41 points (out of a possible 80) for the CAS. Sixty-five Problem Children were identified by the teachers' criterion (those who had been referred) and 65 Non-problem Children were chosen at random from the remainder of the sample to define the Non-problem group. The ratio of agreement was computed by adding the frequency of the cells where the teachers' criterion and the instruments' criterion agreed on the classification of a child (upper left and lower right cells) and dividing by the total number of children to be classified (130 in this case). The CAS correctly identified 73 percent of the children compared to 65 percent for the AML.

Table 10

t-test Comparing Referred and

Nonreferred Groups for AML and CAS

		Referred[a]		Nonreferred[b]		
		M	SD	M	SD	t
AML	A	14.83	5.71	10.38	4.48	6.72*
	M	12.48	4.52	9.54	3.50	5.65*
	L	3.42	1.31	2.09	1.03	6.68*
	Total	30.72	9.10	22.02	7.83	7.71*
CAS	AG	14.43	5.06	10.62	4.27	6.16*
	E	14.97	4.06	11.99	3.81	5.55*
	LP	16.20	3.99	10.49	3.94	10.38*
	Total	45.60	8.84	33.10	10.27	8.98*

[a] n=65

[b] n=250

* Significant at p .01, df = 314, one tailed test.

Table 11

Summary Table for Percentage of Agreement in Identifying Problem Children between Teacher Criterion and AML/CAS

		Teacher Criterion	
		Problem*	Non-problem**
AML	Problem	35[a]	15
	Non-problem	30	50[b]
Agreement ratio	(a + b)/130 = 85/130 = 65%		
CAS	Problem	45[a]	15
	Non-problem	30	50[b]
Agreement ratio	(a + b)/130 = 95/130 = 73%		

* n=65

** n=65

Discussion

The development of the CAS as with many initial attempts at test construction, resulted in a mixture of encouraging positive findings and less satisfying findings to be addressed in further research and development. The discussion explores this mixture, indicates possible research questions for future study, and suggests possible uses and implications for the CAS in light of recent legislation.

For the most part, the results of the derivation of the CAS were positive. The CAS emerged as an instrument with three relatively non-overlapping and stable subscales. The results of the final factor analysis (see Table 5) support this conclusion. However, differences in the homogeniety and stability apppeared among the subscales.

The Learning Problem (LP) subscale emerged as the most successful CAS subscale in terms of homogeneity and stability. Referring back to Table 5, all five items loaded highly (above .59) on the LP factor. Further the five items did not shift their loadings during the two week interval separating the two uses in addition to maintaining similarly high loadings. Such findings could be explained in a number of ways; each of which could have contributed to the observed homogeneity and stability to an unknown degree. First the stability of the teachers' interpretations of these items offers one possible explanation. The consistent, well defined nature of the LP factor may have resulted from the primary orientation of teachers and the

area in which they receive the most intense training; guiding children in the learning process. Training may make teachers sensitive to a child's problems in learning and thus account in part for the exemplary use of the LP subscale. The second plausible explanation is derived from the behavioral nature of the CAS items. The CAS is designed to allow teachers to record the frequency of observable behaviors rather than make inferences about how a child is thinking or feeling. Recording the frequency of observable, learning related behaviors apparently increases the objectivity of the LP subscale results. The third explanation relates to the nature of the observed behaviors. It is possible that the behaviors manifested by children experiencing learning problems are very stable over time, Or in other words the LP subscale represents a measure of a very unitary trait. For example, a child with problems following directions apparently manifests that behavior so consistently that teachers have no doubt about that characteristic of the child. Behaviors that do not change over time can be rated more objectively. The five items selected for the LP subscale reflected the three basic components of the model used to generate these items; input, memory/processing, and output.

The CAS Aggression (AG) subscale emerged as the next most robust subscale in terms of homogeneity and stability. The subscale provided a fairly representative sample of the behaviors often used to describe an aggressive or acting out child. Four of the items selected

demonstrated a high degree of consistency in their loadings. Item 7, while loading significantly on the AG facto in both analyses, exhibited an unexpected degree of multidimensionality in the second factor analysis of the CAS where it also loaded significantly (.41) on the Emotionality (E) factor. That item was intended to describe an acting out child as one who reacts to frustration in an aggressively destructive manner. However, teachers could have responded to that item as much in terms of a loss of emotional control; confusion, over-sensitivity, clinging, crying, and withdrawal, as in terms of acting out. The multidimensionality present in item 7 is considered undesirable for an instrument intending to define three separate aspects of school adaptation problems and would require revision or omission according to future research. With one exception the AG subscale resulted in a robust index of acting out behaviors.

The consistent and fairly well defined nature of the AG subscale could have resulted for a number of reasons. The first possibility arises from the teachers' need to maintain classroom discipline to which the acting out child presents the most noticeable challenge. A child who disrupts discipline or reacts aggressively to problems and frustrations draws attention more readily than a child who responds passively. Therefore, as with learning problems, teachers may be sensitive to observing and describing the acting out child as a reflection of their need to manage this type of child. A second explanation can be derived from the nature of the CAS. The

behavioral nature of the AG items permits teachers to observe aggressive behaviors instead of inferring how aggressive a child feels. By defining the teachers responsibility as recording the frequency of readily observed aggressive behaviors, a significant degree of objectivity was apparently built into the CAS. The third suggested possibility stems from the stability of the trait. For some children, aggression could be such a basic reaction to frustrations that those behaviors can be observed often and in the same basic form, that is, the AG subscale represents a unitary trait. The possible unchanging character of aggressiveness as a trait could make it easier to evaluate the frequency of such behavios and thus result in a homogeneous and stable subscale.

Several problems remain with the factor structure of the Emotionality (E) subscale of the CAS. Relative to the LP and AG subscales, the E subscale is less homogeneous and stable. Further research with the CAS could easily focus on improving the factor purity of this subscale. Only three of the six loadings were greater than .50 while the other factors were defined by items with much higher loadings. Also. item selection was difficult since items with significant loadings (greater than .30) that also satisfied the criteria for simple structure (Thurstone (1947) were scarce. This resulted in selection of items with loadings in the .30 to .40 range. Since loadings of this magnitude account for only 9 to 16 percent of an item's variance, a definite potential for multidimensionality

exists in this factor.

The multidimensionality within the E subscale appears to stem from a variety of sources with the teachers' interpretations of items being only one possible explanation. Only items 2,11, and 16 demonstrated consistency of interpretation over the two uses and appeared to define a factor of emotional immaturity. Items 5 and 14, hypothesized to define a depressive facet within the E subscale, did no loadhighly and/or exclusively on the E factor. Loadings shown in Table 5 indicate that these item actually split their loadings over two factors. Item 5 loaded almost equally on the E and LP factors, possibly because teachers are most sensitive to low energy levels during learning tasks and cannot easily divorce general activity level from their learning process orientation. Item 14 loaded almost equally on the E and AG factors. For this item, teachers may have viewed acting out children as being ostracized by peers for aggressiveness and forced to work and play alone where they spend considerable time disturbing others. Although not shown, a four factor oblique solution for the CAS found items 5 and 14 loading highly and together on that fourth factor to define a separate depression subscale. However in trying to integrate that factor into the E subscale, the items split their loadings as described above. Item 8 was also problematic since it loaded equivalently on the E and LP factors. Perhaps this duality results from teachers encountering this behavior most often during learning tasks or from the

teachers' difficulty in deciding whether the failure to respond represents an emotional problem or lack of information. This later possibility points to the complication resulting when a teacher is asked to "get into the child's head" rather than observe behavior. Emotionality, defined as intrapersonal distress and interpersonal ineptitude may not be a unitary trait with easily observable behavioral correlates. Related to the possible lack of unity may be the often transient manifestations of emotionality as defined above. Daily fluctuations in the form or intensity of behaviors may make stable recording of frequency impossible. A third possible explanation for the observed multidimensionality rests with the CAS itself and the difficulty in writing unambiguous items describing the behavioral correlates of emotional states. Items 5,8, and 14 need further consideration and possible revision before being accepted for the CAS. Alternative solutions would be to split the E subscale into two separate factors such as depression and emotional immaturity or abandon some items completely.

Interpretation of the CAS should be limited to use of the Total Score as a global measure of maladaptation without the diagnostic interpretation implied by subscale profile analysis. The difficulties encountered with the E subscale would result in considerable diagnostic ambiguity if a profile analysis were attempted with the CAS in its current state of development. The CAS already has one homogeneous and stable subscale that can be used intuitively to suggest investigation

of the child's learning process. The AG suscale as a profile of an acting out child is also satisfactory and can be used to suggest investigation of the child's reactions to frustration or their problem solving skills. The CAS can presently provide a adequate global measure of school maladaptation for use in a screening program. The research nature of the instrument allows for refinement before use in an applied setting. Considered as a whole, the CAS demonstrates some solid basic statistical properties that overshadow its difficulties with factor purity.

Reliability, especially consistency over time, is perhaps the most crucial property of a test. For without stable scores, all other properties lose meaning. Nunnally (1967) considers the most robust test of reliability to be the use of alternate forms given two weeks apart. That strategy provides both a measure of the test's internal consistency as a sample from a domain and a measure of the repeatability of scores. In the absence of an alternate form, Nunnally (1967) recommends coefficient alpha as a substitute measure of internal consistency. Coefficient alpha indicates the correlation of a test with a hypothetical alternate form. The test-retest and alpha coefficients are interchangeable indices of reliability. A high test-retest coefficient in the absence of a high alpha coefficient casts serious doubt on the soundness of the retest coefficient. A test as a sample of behavior from a domain must be internally consistent before being judged repeatable.

Both the test-retest coefficient and coefficient alpha for the CAS Total Score, AG subscale, and LP subscale were extremely high (above .86 and .87 respectively). The high coefficient alpha for the Total Score indicates that the items for the CAS have been sampled from the same domain; defined as "the behaviors that make a child maladaptive to the classroom environment". The AG and LP itemsitems are likewise precisely sampled from unique domains; namely aggressive behavior and learning difficulty. With this high degree of internal consistency, the strategy outlined by Nunnally (1967) predicts that such a test will yield highly repeatable scores. This proves to be the case for the CAS as shown by the high test-retest coefficients obtained. The coefficient alpha for the E subscale is slightly lower than those for the other subscales which indicates that the E subscale items were not sampled from the same emotional adjustment domain. The E subscale may have beeen selected from two mutually exclusive domains such as emotional immaturity and depression which cannot be combined into one homogeneous factor. This finding is not surprising considering the results of the factor analysis which indicated a significant degree of multidimensionality within the E subscale. Consistent with Nunnally's strategy, the lesser degree of internal consistency would result in a slightly lower test-retest coefficient than those for the other subscales. This was precisely the finding. Despite being slightly lower, the retest coefficient of .80 for the E subscale is still quite satisfactory.

Further support for the reliability of the CAS was found in the standard error of measurement (SE_m). The SE_m for the CAS subscales were all less than .30 points and suggest that true scores fell within approximately $\pm$.85 points of the obtained scores with 99% probability. The SE_m for the Total Score allowed for prediction of true scores to within $\pm$2 points with 99% probability. These rather narrow confidence bands for the CAS are but a reflection of the high reliability of the instrument. Apparently the items of the CAS cluster well enough to permit effective use of the test-retest method. All obtained scores are highly repeatable and extremely accurate estimates of true scores. The highly reliable CAS scores allow for considerable confince in the results of investigations into other psychometric properties.

Having high reliabilty, the CAS demonstrated a high degree of relationship with a similar instrument, the AML. The AML, through previous research, has been shown to be an effective measure of school maladaptation. Because of its previous performance, the AML was considered an excellent independent definition of school maladaptation and was selected to serve as a criterion for the determination of convergent validity. The AML and CAS Total Scores are highly related (.85) which suggests that the CAS taps the same domain as the AML. The same sequence of logic applies to each suscale score since they all demonstrated a significant relationship with an independent definition of their respective content domains. The CAS, based

on its correlation with a similar instrument, appears to measure what it was intended to; school adaptation.

One aspect of school adaptation mentioned previously was educational progress. Achievement test scores provede an easily available and useful criterion of educational progress. From the documented inverse relationship between educational progress and school maladaptation (Cowen et al., 1973), it can be expected that high CAS scores (high maladaptation) will predict low achievement test scores (poor educational progress). The CAS was in fact related to school achievement in this fashion. However the relationship was not always strong but the tests of significance suggest that the relationships are not the result of chance. As predicted, most CAS scores (measuring maladaptation) increased as achievement scores decreased. The coefficients relating the CAS to achievement test scores were generally consistent with those reported by Cowen et al. (1973) who found correlations ranging from -.37 to -.41 between the AML and the California Test of Mental Maturity. In most instances, the LP subscale emerged with the best correlation with achievement test scores; presumably because of the similarity between subscale content and the criterion. The obtained coefficients are generally acceptable but could perhaps be improved through the use of other, daily measures of school achievement. The shortcomings of this criterion does not necessarily negate its usefulness. Even the small, but significant, degree of correlation with a measure of

maladaptation supports the logic that a maladapted child is one who has difficulty achieving at a par with peers. Academic achievement is one of the school's most important goals. The early primary grades where so many basic academic skills are taught are especially crucial. A screening instrument identifying potential obstacles to learning at this stage hold promise for promoting children's adaptation to this aspect of school.

The other portion of school adaptation, as defined earlier, referred to behavior. Validity as measured by relationship to a measure of this criterion is also crucial. To define maladapted children according to teachers' recollections of who was referred during the past school year is surely problematic. A more systematic investigation with other possible independent criteria would prove fruitful. Suggested criteria would include detailed, in-classroom behavioral observation, examination of daily classroom work, and referrals to principals or other in-building disciplinary actions. Nonetheless, even using the crude criterion of Referral/nonreferral, the CAS performed satisfactorily. Both the AML and CAS were able to differentiate groups of referred children and nonreferred children at a statistically significant level.

The result that high AML and CAS scores indicated maladaptation was furhter supported by the data dealing with referral status. Both mean scores and percent of agreement ratios were used to test this crucial property. The ability to discriminate groups is to be

expected of a screening instrument designed to identify maladapted children. As a group, referred children received higher AML and CAS scores and were thus seen as more maladapted by teachers. Further support for this type of validity was found in the percent of agreement ratios comparing the rating scales and the independent criterion of adaptation (Referred/Nonreferred). The classifications according to AML and CAS scores were based on a cutting score at the 70th percentile such that 30% of the children (those receiving the highest scores0 were classified as maladapted. The CAS correctly classified 73% of the children previously classified according to the teachers' criterion of Problem/Non-problem. This result is most encouraging in light of the imprecise nature of the independent criterion. It demonstrates the ability of the CAS to correctly classify a significant portion of the children screened so that intensive investigation would be reserved for those children showing the greatest probability of being truly maladapted. Further research could investigate how the CAS could be improved in terms of its ability to discriminate groups.

The number of children identified as maladapted can be manipulated by altering the cutting score. The trend seems to be that lowering the cutting score to cut off a larger area of the upper region of the positively skewed distribution would label a greater number of children as maladapted. In using a screening instrument, as in an identification program designed to fulfill the requirements of

P.L. 94-142 discussed earlier, it may be desirable to tenatively identify a large number of children. The intent of such a screening program is to identify and then examine and diagnosis more intensely. In a search for handicapped children, it may be best to put forth the hypothesis of handicap for a larger number of children than are actually handicapped. Such a strategy would avoid overlooking any children due to the inevitable imperfections of any measurement instrument. Children falling under the other portion of the definition of school adaptation (i.e., not having a traditional handicap but still having difficulty adjusting appropriately to a regular classroom) would also be identified in the same screening program. They could then receive some type of intervention before their problems became more serious or compounding problems developed. The prevention of other problems also applies to traditionally handicapped children. The cost in practitioners' time and effort is so small for a screening program so that even if closer examination discovered a large number of false positives, the loss would be minimal. From a teacher's perspective, an entire class of 18-25 children can be rated in 45 to 90 minutes. The time of other practitioners such as counselors or school psychologists for training teachers to use the CAS, score the forms, and interpret scores to decided which children will be examined more closely is comparatively brief. Further, it is possible that a larger number of true positives (children with adaptation problems) would be identified than would have been

through the use of more expensive techniques (e.g., individual psychological testing) which practitioners understandably employ with more discretion. A local district could establish is own cutting score based on factors it felt important and screen for the number of children it could realistically examine more closely.

The search for handicapped children mandated by P.L. 94-142 will probably increase the interest in screening instruments like the CAS. Large school age populations will need to be canvassed to locate handicapped children. Considering the current trend toward austerity in public school budgets, monetary cost will be a crucial factor in determining what types of identification strategies will be employed. Time is another factor since trends toward reduction in personnel will place greater work demands on teachers and professional support staff. Both trends suggest that schools should be turning toward providing fewer types of service. Yet, legislation in the form of P.L. 94-142 is demanding provision of another service. Use of a brief easily administered behavior rating scale like the CAS appears to meet the needs of a screening program to locate handicapped children. The CAS contains three subscales that can be used to guide further investigation into the child's situation. The CAS possesses excellent reliability, some encouraging indications of validity, and most importantly has the ability to discriminate groups according to degree of school maladaptation. Having brevity, ease of use, minimal time required for use, and solid psychometric

properties; the CAS appears to satisfy the criteria for a successful screenin instrument for use in a large scale screening program (Cowen et al., 1973). The CAS has emerged from the research as a promising instrument for use in screening large school populations for all types of school adaptation problems and an instrument that merits further research and development.

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